UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,189	11/13/2001	Srinivas Gutta	US010576	3037

24737	7590	10/13/2006

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EXAMINER
JARRETT, SCOTT L

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/014,189	GUTTA ET AL.
	Examiner	Art Unit	
	Scott L. Jarrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This **Final** Office Action is responsive to Applicant's amendment filed August 13,

2006. Applicant's amendment amended claims 1-23. Current Claims 1-23 are pending.

Response to Amendment

2.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action.

The Objection to the Abstract is withdrawn in response to Applicant's amendment

to the Abstract.

The Objection to the Title is withdrawn in response to Applicant's amendment to

the Title.   .

Response to Arguments

3.   Applicant's arguments with respect to claims 1-23 have been considered but are

moot in view of the new ground(s) of rejection.

It is noted that the applicant did not challenge the officially noticed facts cited in

the previous office action(s) therefore those statement(s) as presented are herein after

prior art.   Specifically it has been established that it was old and well known in the art at

the time of the invention:

-              to classify/identify items such as television programs, content and/or

products using of well-known pattern-recognition methods including but

not limited to: value difference measures/metrics, nearest-neighbor,

classifiers, similarity/instance-based methods, lazy learning, or the like;

wherein these methods/systems are utilized for things such as

recommending items to users; and

to automate manual methods.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5.   Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding Claims 1-23, a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result.

In the present case, the method for identifying one or more mean items merely computes one or more mathematical values (variances, distances, differences), selects symbolic values for one or more symbolic attributes of items (item features/characteristics) and groups (organizes, clusters) items based on the mathematical values/symbolic attributes/values, while the compilation of data may have some have some real world value (i.e. utility/usefulness) there is no requisite functionality present to satisfy the practical application requirement nor are there any "acts" which transform the data and/or cause a physical transformation to occur outside the computer (i.e. not concrete or tangible) therefore the invention as claimed does not produce a useful, concrete, *and* tangible result.

Merely claiming nonfunctional descriptive material, **i.e.**, abstract ideas, stored in a computer-readable medium, in a computer, on an electromagnetic carrier signal does not make it statutory. See Diamond v. Diehr, 450 U.S. 175, 185-86, 209 USPQ 1, 7-8 (1981) (noting that the claims for an algorithm in Benson were unpatentable as abstract

ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer."). Such a result would exalt form over substance. In re Sarkar, 588 F.2d 1330, 1333, 200 USPQ 132, 137 (CCPA 1978) ("[E]ach invention must be evaluated as claimed; yet semantogenic considerations preclude a determination based solely on words appearing in the claims. In the final analysis under 101, the claimed invention, as a whole, must be evaluated for what it is.") (Abele, 684 F.2d 902, 907, 214 USPQ 682, 687(CCPA 1982)). See also In re Johnson, 589 F.2d 1070, 1077, 200 USPQ 199, 206 (CCPA 1978) ("form of the claim is often an exercise in drafting"). Thus, nonstatutory music is not a computer component and it does not become statutory by merely recording it on a compact disk. Protection for this type of work is provided under copyright law.

A useful, concrete and tangible result, for example, might be achieved through the utilization of the grouped/cluster items to recommend television programs to users, a real-world/actual effect.

Double Patenting

6.   Claims 1 and 10 of this application conflict with claims 6 and 15 of Application

No. 10/014180. 37 CFR 1.78(b) provides that when two or more applications filed by

the same applicant contain conflicting claims, elimination of such claims from all but one

application may be required in the absence of good and sufficient reason for their

retention during pendency in more than one application. Applicant is required to either

cancel the conflicting claims from all but one application or maintain a clear line of

demarcation between the applications. See MPEP § 822.

       Claims 1-23 of this application conflict with claims 1-20 of Application No.

10/014,192. 37 CFR 1.78(b) provides that when two or more applications filed by the

same applicant contain conflicting claims, elimination of such claims from all but one

application may be required in the absence of good and sufficient reason for their

retention during pendency in more than one application. Applicant is required to either

cancel the conflicting claims from all but one application or maintain a clear line of

demarcation between the applications. See MPEP § 822.

       Claims 1, 10, 16 and 22 of this application conflict with claims 10 and 17 of

Application No. 10/183,762. 37 CFR 1.78(b) provides that when two or more

applications filed by the same applicant contain conflicting claims, elimination of such

claims from all but one application may be required in the absence of good and

sufficient reason for their retention during pendency in more than one application.

Applicant is required to either cancel the conflicting claims from all but one application

or maintain a clear line of demarcation between the applications. See MPEP § 822.

A rejection based on double patenting of the "same invention" type finds its
support in the language of 35 U.S.C. 101 which states that "whoever invents or
discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis
added). Thus, the term "same invention," in this context, means an invention drawn to
identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re
Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164
USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by
canceling or amending the conflicting claims so they are no longer coextensive in
scope. The filing of a terminal disclaimer <u>cannot</u> overcome a double patenting rejection
based upon 35 U.S.C. 101.

Claims 1, 10, 16 and 22-23 rejected under 35 U.S.C. 101 as claiming the same

invention as that of claims 11, 27 and 28 of prior U.S. Patent No. 6,801,917. This is a

double patenting rejection.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Datta et al., Symbolic Nearest Mean Classifiers (AAAI 1997) in view of Datta et al.,

Learning Symbolic Prototypes (ICML 1997; Datta/Kibler, as cited in the PTO-892 form

mailed March 13, 2006).

Regarding Claims 1 and 10 Datta et al. teach a method for partitioning

(identifying, segmenting, characterizing, classifying, categorizing, etc.) one or more

mean items for a plurality of items, J, each of the items having at least one symbolic

(categorical, non-metric, non-numeric, Boolean, binary, etc.) attribute (feature,

characteristic, etc.), each symbolic attribute having at least one possible value and

further comprising:

- computing (determining, calculating, etc.) a variance (distance, difference, etc.)

of the plurality of items, J, for each of the possible symbolic values, x_u, for each of the

symbolic attributes ("Distances between Symbolic Attribute Values", Columns 2-3, Page

2);

- selecting for each of the symbolic attributes (item features/characteristics) at least one symbolic value, x_u, that minimizes the variance as the mean symbolic value ("The Mean of Symbolic Attributes", Column 2, Page 2); and

- wherein for at least one cluster a given symbolic attribute has more than one value (Column 1, Last Paragraph, Page 2; "The Mean of Symbolic Attributes", Column 2, Page 2).

Datta et al. does not expressly teach that for at least one cluster a given symbolic attribute has more than one value such that more than one mean symbolic value is determined for the symbolic attribute as claimed.

Datta/Kibler teach that for at least one cluster a given symbolic attribute has more than one value such that more than one mean symbolic value is determined for the symbolic attribute (determining a mean for each symbolic attribute creating a prototype for the cluster/class/group; Last Paragraph, Page 3; Paragraphs 1-3, Page 4; i.e. "represent a cluster by only one program, but rather, multiple programs the represent the mean or multiple means may be employed to represent the cluster. Thus, in a further variation, a cluster may be represented by multiple means or multiple feature values for each possible feature.", Paragraph 0052 of the published application, U.S. 2003/0097186) in an analogous art of partitioning a plurality of items into clusters utilizing one or more mean items for the purposes of learning more than one prototype

for each class (cluster, group, category, etc.; Paragraph 2, Page 2) and/or determining a

"more robust" distance measures between symbolic values (Paragraph 2, Page 4).

It would have been obvious to one skilled in the art at the time of the invention

that the method for partitioning a plurality of items into clusters by identifying one or

more mean items for a plurality of items having at least one symbolic value as taught by

Datta et al. would have benefited from utilizing more than one value for a symbolic

attribute such that more than one mean symbolic value is determined for the symbolic

attribute in view of the teachings of Datta/Kibler; the resultant method purposes of

learning more than one prototype for each class (cluster, group, category, etc.;

Datta/Kibler: Paragraph 2, Page 2) and/or determining a "more robust" distance

measures between symbolic values (Datta/Kibler: Paragraph 2, Page 4).

Regarding Claims 2 and 11 Datta et al. teach a method for identifying one or

more mean items wherein the mean symbolic value for each symbolic attribute

comprises a mean of the plurality of items ("The Mean of Symbolic Attributes", Column

2, Page 2).

Regarding Claims 3 and 14 Datta et al. teach a method for identifying one or

more mean items wherein the symbolic attributes comprises one or more hypothetical

items (tentative, potential, probable, projected, sample, test, example, training, etc.;

Column 2, Paragraph 1, Page 2; "Learning Multiple Prototypes", Column 1, Page 4).

Regarding Claims 4 and 12 Datta et al. teach a method for identifying one or more items further comprising assigning a label (class, descriptor, text, name, tag, etc.) to the plurality of items using at least one symbolic value from the at least one of the item means ("Learning Multiple Prototypes", Column 1, Page 4; "K-Means Clustering", Columns 1-2, Page 4).

Regarding Claims 5 and 13 Datta et al. teach a system and method for identifying one or more items wherein the plurality of items are a cluster (grouping, collection, set, etc.) of similar items ("K-Means Clustering", Columns 1-2, Page 4; Figures 1a, 1b).

Regarding Claims 6-8 Datta et al. teach a method for identifying one or more items as discussed above.

Datta et al. is silent on the exact nature of the items being identified/classified and as such does not expressly teach that the items are programs, content or products as claimed.

Official notice is taken that classifying/identifying items such as television programs, content and/or products using of well-known pattern-recognition methods including but not limited to: value difference measures/metrics, nearest-neighbor,

classifiers, similarity/instance-based methods, lazy learning, or the like, is old and very well known wherein these methods/systems are utilized for things such as recommending items to users.

It would have been obvious to one skilled in the art at the time of the invention that the method for identifying one or more mean items for a plurality of items as taught by Datta et al. would have been utilized to identify/classify any of a plurality of items including but not limited to programs, products and/or content in view of the teachings of official notice.

Further it is noted that while Datta et al. does not expressly teach the specific nature of the items (programs, content, products, etc.) as recited in claims 6-8; these differences are only found in the non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific nature of the items being identified/classified. Further, the structural elements remain the same regardless of the specific nature of the items being identified/classified. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, see In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP 2106.

Regarding Claims 9, 15 and 21 Datt et al. teach a system and method for

partitioning a plurality of items by identifying one or more items wherein the variance

(distance, difference, similarity measure, etc.) is computed as follows:

$$Var(J) = \sum_{i \in J} (xi - xu)^2$$

where J is a cluster of items from the same class, x_i is a symbolic feature value from

item i and x_u is an attribute value from one of the items in J such that it minimizes Var(J)

("The Mean of Symbolic Attributes", Column 2, Page 2).

Regarding Claims 16 and 22-23 Datta et al. teach a method for partitioning a

plurality of items by identifying one or more mean items for a plurality of items, J, each

of the items having at least one symbolic attribute (feature, characteristic, etc.), each

symbolic attribute having at least one possible value and further comprising:

- computing (determining, calculating, etc.) a variance (distance, difference, etc.)

of the plurality of items, J, for each of the possible symbolic values, x_u, for each of the

symbolic attributes ("Distances between Symbolic Attribute Values", Columns 2-3, Page

2);

- selecting for each of the symbolic attributes (item features/characteristics) at

least one symbolic value, x_u, that minimizes the variance as the mean symbolic value

("The Mean of Symbolic Attributes", Column 2, Page 2); and

- wherein for at least one cluster a given symbolic attribute has more than one

value (Column 1, Last Paragraph, Page 2; "The Mean of Symbolic Attributes", Column

2, Page 2).

Datta et al. does not expressly teach that for at least one cluster a given symbolic attribute has more than one value such that more than one mean symbolic value is determined for that symbolic attribute as claimed.

Datta/Kibler teach that for at least one cluster a given symbolic attribute has more than one value such that more than one mean symbolic value is determined for that symbolic attribute (determining a mean for each symbolic attribute creating a prototype for the cluster/class/group; Last Paragraph, Page 3; Paragraphs 1-3, Page 4; i.e. "represent a cluster by only one program, but rather, multiple programs the represent the mean or multiple means may be employed to represent the cluster. Thus, in a further variation, a cluster may be represented by multiple means or multiple feature values for each possible feature.", Paragraph 0052 of the published application, U.S. 2003/0097186) in an analogous art of partitioning a plurality of items into clusters utilizing one or more mean items for the purposes of learning more than one prototype for each class (cluster, group, category, etc.; Paragraph 2, Page 2) and/or determining a "more robust" distance measures between symbolic values (Paragraph 2, Page 4).

It would have been obvious to one skilled in the art at the time of the invention that the method for partitioning a plurality of items into clusters by identifying one or more mean items for a plurality of items having at least one symbolic value as taught by Datta et al. would have benefited from utilizing more than one value for a symbolic

attribute such that more than one mean symbolic value is determined for the symbolic

attribute in view of the teachings of Datta/Kibler; the resultant method purposes of

learning more than one prototype for each class (cluster, group, category, etc.;

Datta/Kibler: Paragraph 2, Page 2) and/or determining a "more robust" distance

measures between symbolic values (Datta/Kibler: Paragraph 2, Page 4).

While Datta et al. teach a *method* for identifying one or more mean items for a

plurality of items Datta et al. does not expressly teach that a *system* and/or article of

manufacture is utilized to perform/execute the method as claimed.

It was known at the time of the invention that merely providing an automatic

means to replace a manual activity which accomplishes the same result is not sufficient

to distinguish over the prior art, In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194

(CCPA 1958). For example, simply automating the step(s) of computing a variance and

selecting for each symbolic attribute a symbolic value gives you just what you would

expect from the manual step as shown in Datta et al. In other words there is no

enhancement found in the claimed steps. The claimed system only provides automation

for the manual activity. The end result is the same as compared to the manual method.

A computer can simply iterate the steps faster. The result is the same.

It would have been obvious to a person of ordinary still in the art at the time of

the invention to automate the method for identifying one or more mean items for a

plurality of items as taught by the combination of Datta et al. and Datta/Kibler; the

resultant system/method being capable of performing the methods steps faster and/or

more efficiently, which is purely known, and an expected result from automation of what

is known in the art.

Regarding Claim 17 Datta et al. teach a method for identifying one or more mean

items wherein the mean symbolic value for each symbolic attribute comprising a mean

of the plurality of items ("The Mean of Symbolic Attributes", Column 2, Page 2).

Regarding Claim 18 Datta et al. teach a method for identifying one or more mean

items wherein the symbolic attributes comprises one or more hypothetical items

(tentative, potential, probable, projected, sample, test, example, training, etc.; Column 2,

Paragraph 1, Page 2; "Learning Multiple Prototypes", Column 1, Page 4).

Regarding Claim 19 Datta et al. teach a method for identifying one or more items

further comprising assigning a label (class, descriptor, text, name, tag, etc.) to the

plurality of items using at least one symbolic value from the at least one of the item

means ("Learning Multiple Prototypes", Column 1, Page 4; "K-Means Clustering",

Columns 1-2, Page 4).

Regarding Claim 20 Datta et al. teach a method for identifying one or more items wherein the plurality of items are a cluster (grouping, collection, set, etc.) of similar items ("K-Means Clustering", Columns 1-2, Page 4; Figures 1a, 1b).

Regarding Claim 21 Datta et al. teach a method for identifying one or more items wherein the variance is computed as follows:

$$Var(J) = \sum_{i \in J} (xi - xu)^2$$

where J is a cluster of items from the same class, x_i is a symbolic feature value from item i and x_u is an attribute value from one of the items in J such that it minimizes $Var(J)$ ("The Mean of Symbolic Attributes", Column 2, Page 2).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Zhang et al., U.S. Patent No. 5,832,182, teach a feature-based clustering system and method for partitioning a plurality of metric and non-metric (symbolic) attributes wherein the clusters include multiple centroids.

- Chislenko et al., U.S. Patent No. 6,041,311, teach a system and method for recommending items to users comprising user preference information and feature-based clustering wherein the cluster include mean items.

- Guha et al., U.S. Patent No. 6,049,797, teach a system and method for partitioning a plurality of items into clusters of similar items by identifying one or more similarity measures (distances, centroids, etc.) wherein the items have at least one symbolic (categorical) attribute/value.

- Martin et al., U.S. Patent No. 6,260,038, teach a system and method for partitioning a plurality of items into clusters of similar items by identifying one or more similarity measures (mean, distance, etc.) including one or more means of symbolic (categorical), binary and numeric attributes.

- Fayyad et al., U.S. Patent No. 6,581,058, teach a feature-based clustering system and method for partitioning (segmenting) a plurality of items into clusters of similar items by identifying one or more similarity measures (mean) for symbolic and discrete attributes.

- Zhang et al., U.S. Patent No. 6,584,433, teach a system and method for feature based clustering wherein the clusters have multiple center points.

- Kleinberger et al., U.S. Patent No. 7,072,902, teach a feature based clustering system and method.

- Gutta et al., U.S. Patent Publication No. 2003/0014404, teach a feature based clustering system and method for recommending items to users based on nearest neighbors.

- Ismail et al., WO 01/17250, teach a system and method for recommending television programs based on viewer viewing habits (watching preferences) and demographics.

- Gowda et al., Symbolic Clustering Using a New Similarity Measure (1992) teaches a well known method for partitioning a plurality of items into clusters of similar items by identifying one or more means items for a plurality of items having at least one symbolic value.

- Ehrmantraut et al., The Personal Electronic Program Guide (1996), teach a system and method for recommending television programs to users based on a plurality of program descriptors (features, symbolic attributes) and viewer viewing preferences (user profiles).

- Jain, A.K. et al., Data Clustering: A Review (1999), teach a plurality of well known methods/systems for partitioning a plurality of items into clusters of similar items by identifying one or more means, distance measures and the like for each of the plurality of items wherein at least one of the items has symbolic attributes/values.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
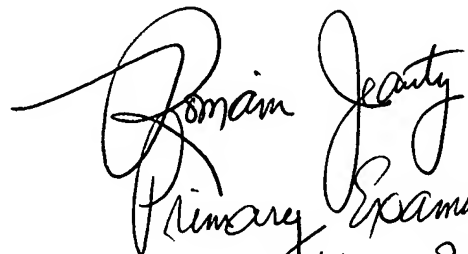
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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SJ
10/5/2006